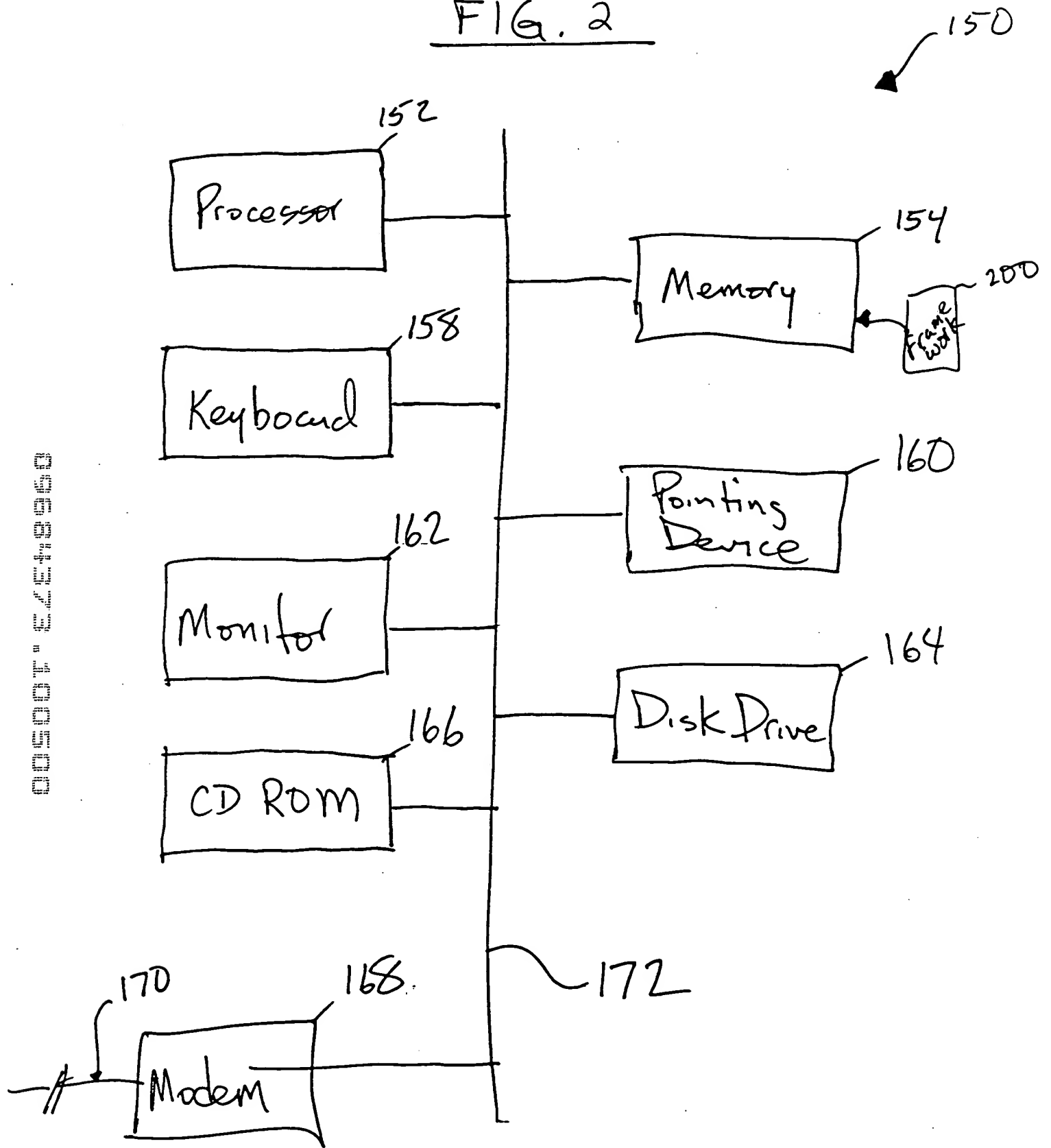


Figure 1: Virtual Network Environments

The above diagram illustrates the virtual network environments. Virtual Network Environment 1 contains one application WEB SITE 1, is defined by the Virtual Network Address 10.10.0.1 resides solely on computer 1. Virtual Network Environment 2 contains two applications, WEB SITE 2 and APP 2, and spans two computers, Computer 2 and Computer 3. The virtual network of VNE 2 is 10.10.2.0.

FIG. 1

FIG. 2



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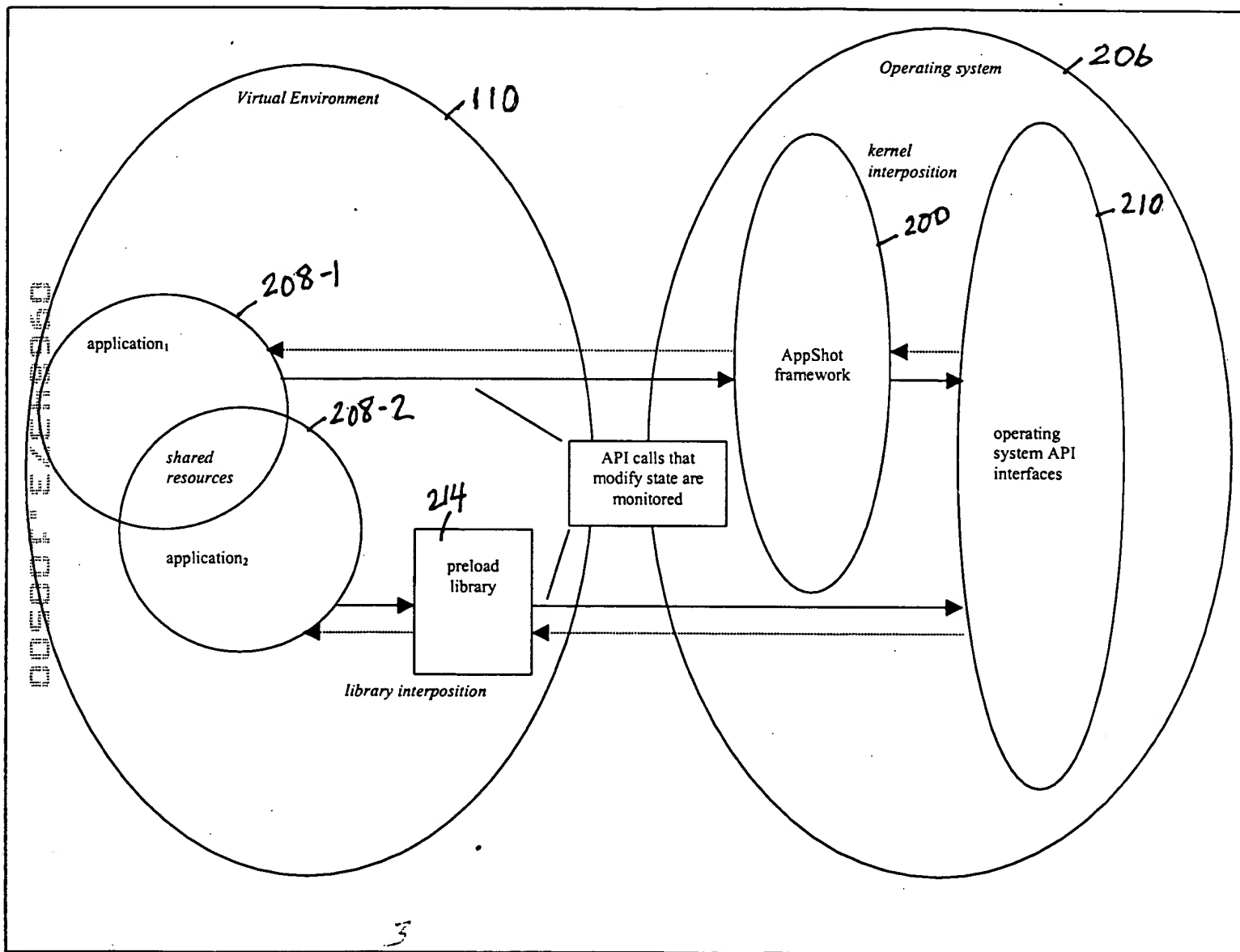
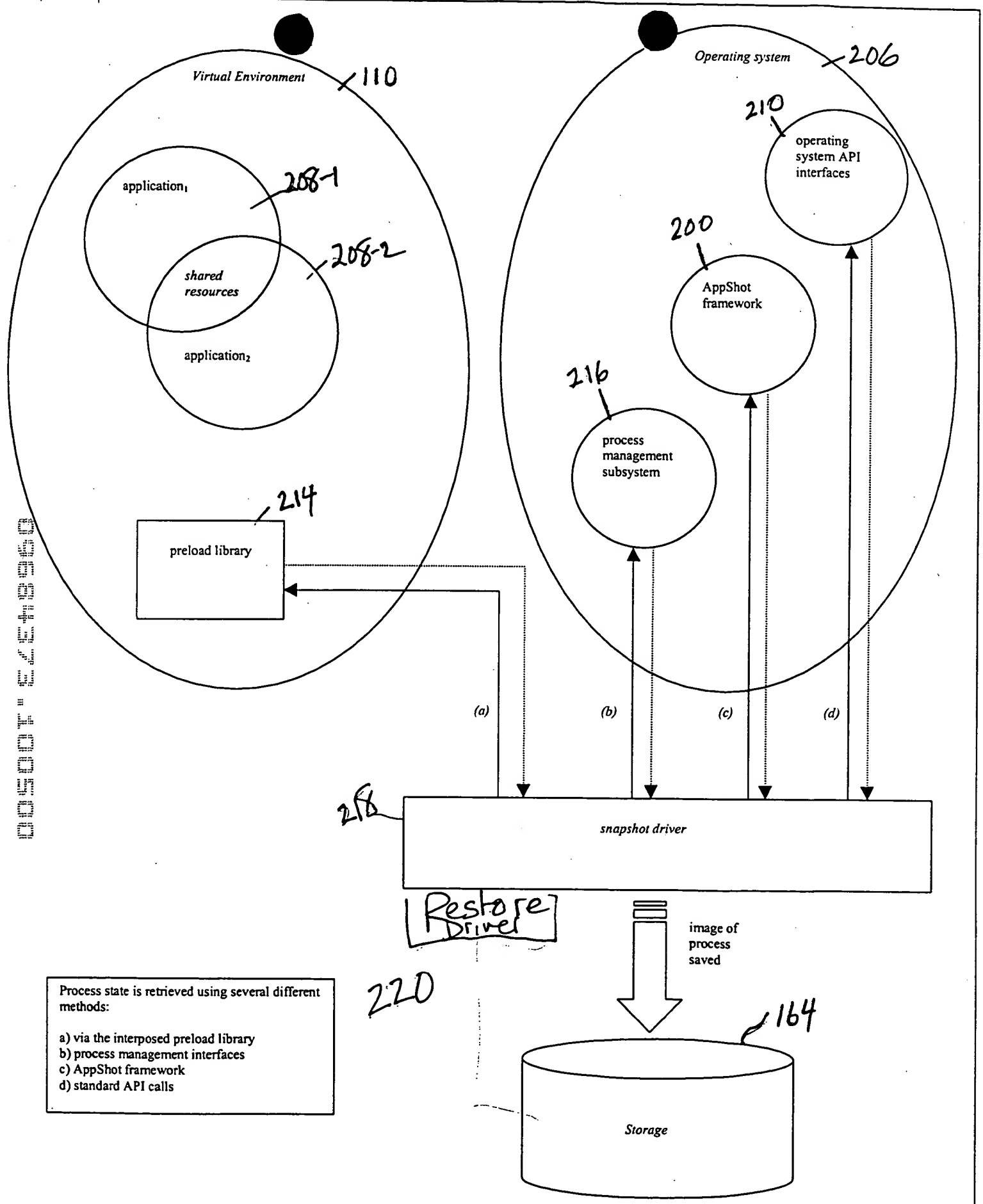


Figure 1. Tracking application state via library and kernel interposition.

FIG. 3



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Process state is retrieved using several different methods:

- a) via the interposed preload library
- b) process management interfaces
- c) AppShot framework
- d) standard API calls

Figure 2. Capture of an application's run-time state.

FIG. 4

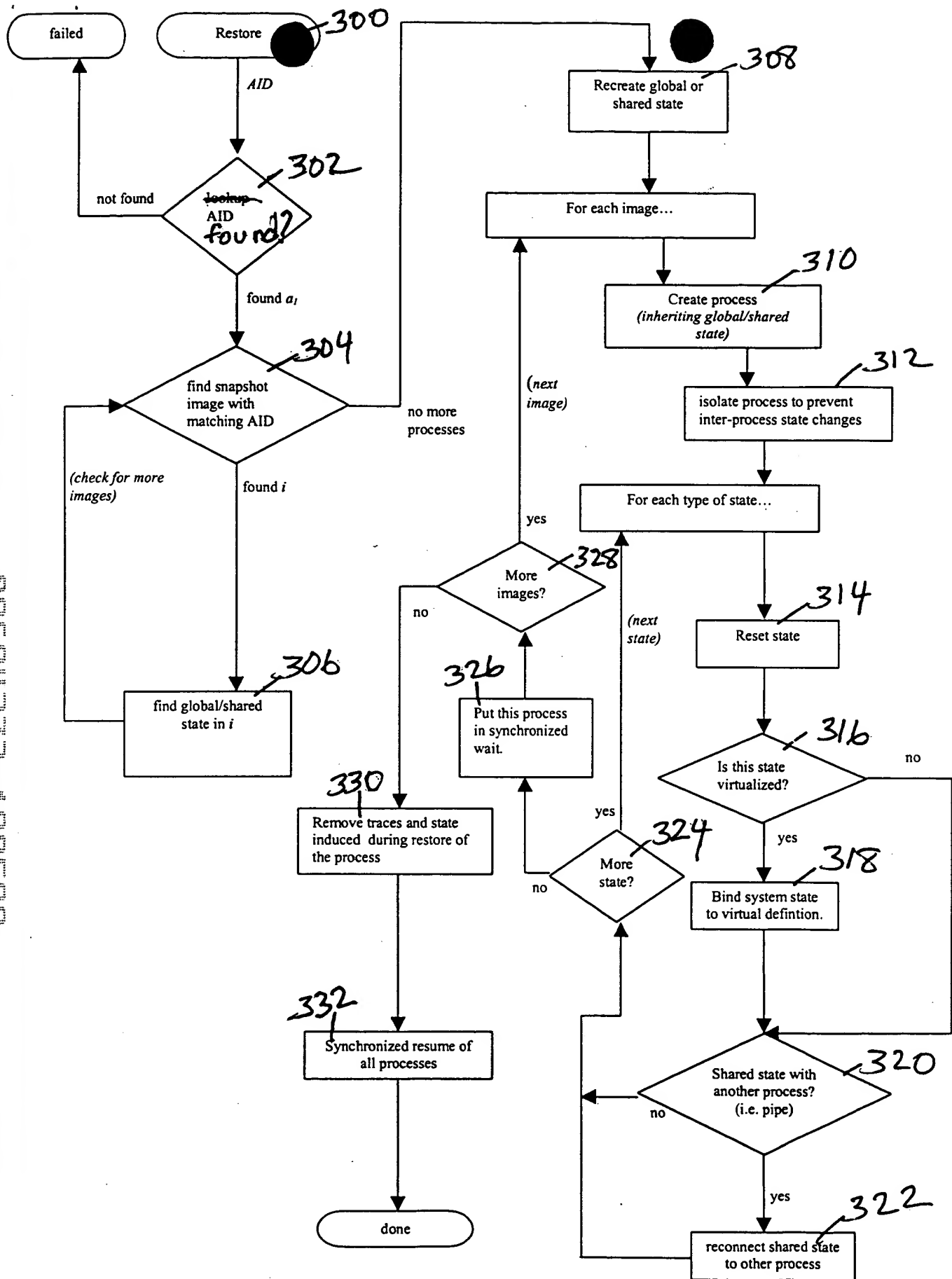


Figure 4. Flowchart of restore.

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Resource Name	Size
Resource Descriptor	Size
Resource Type	
Resource Name	
Resource Data	

Alarm Info	Semaphore Info
File Info	Platform Name
Signal Info	Data Queued Info
Current directory	Process Status
Application Virt ID	Credentials Info
Application Virt ^{Net} Mask	File Locking Info
Dynamic Symbolic Link Info	MMap Memory Info
Resource limit Info	Process Map Info
Process Info	Schedule control info
Snapshot Info	Lightweight Process info

FIG. 7

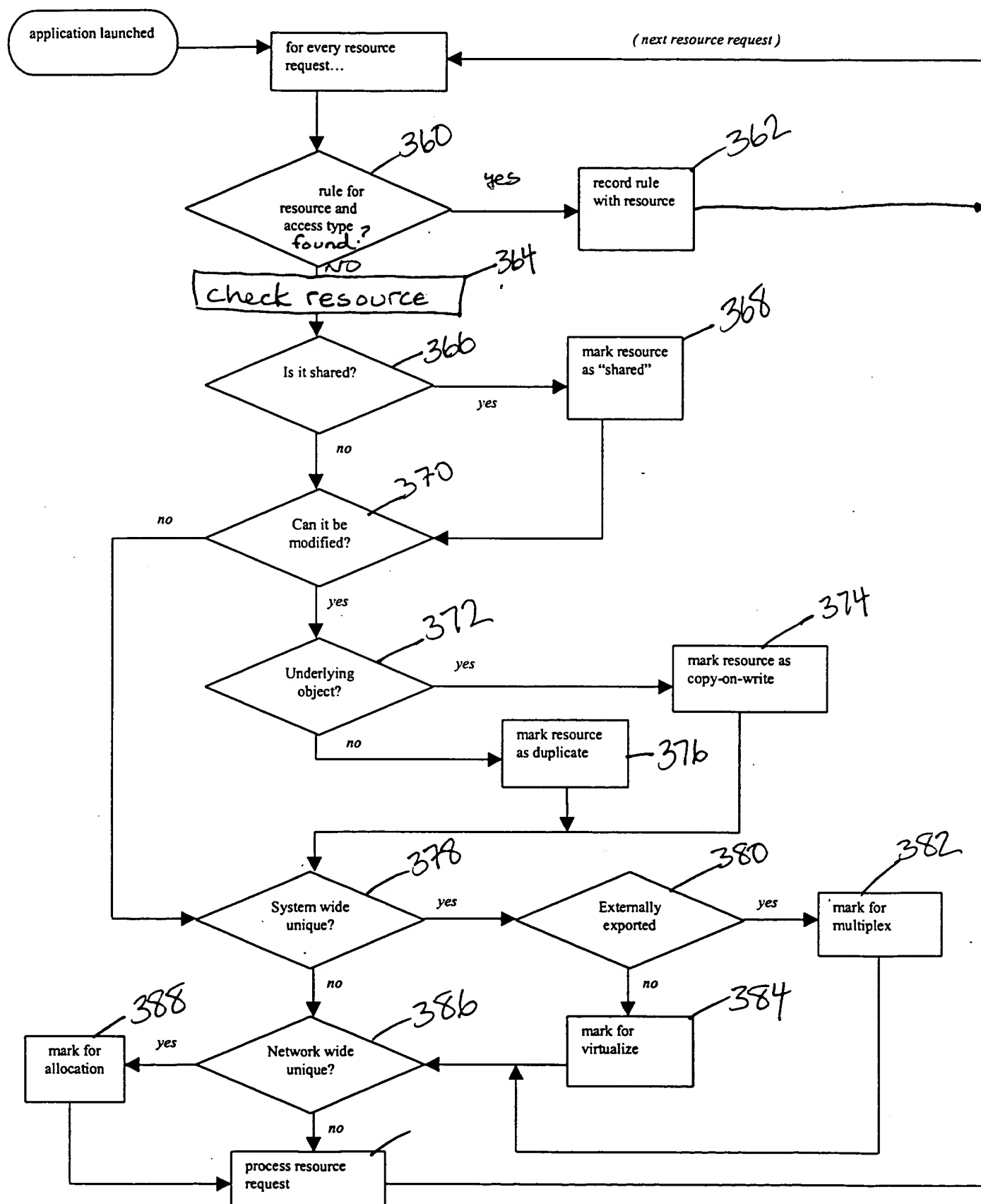
[illegible]

Figure 1. Flowchart of creation of virtual template.

Fig. 8

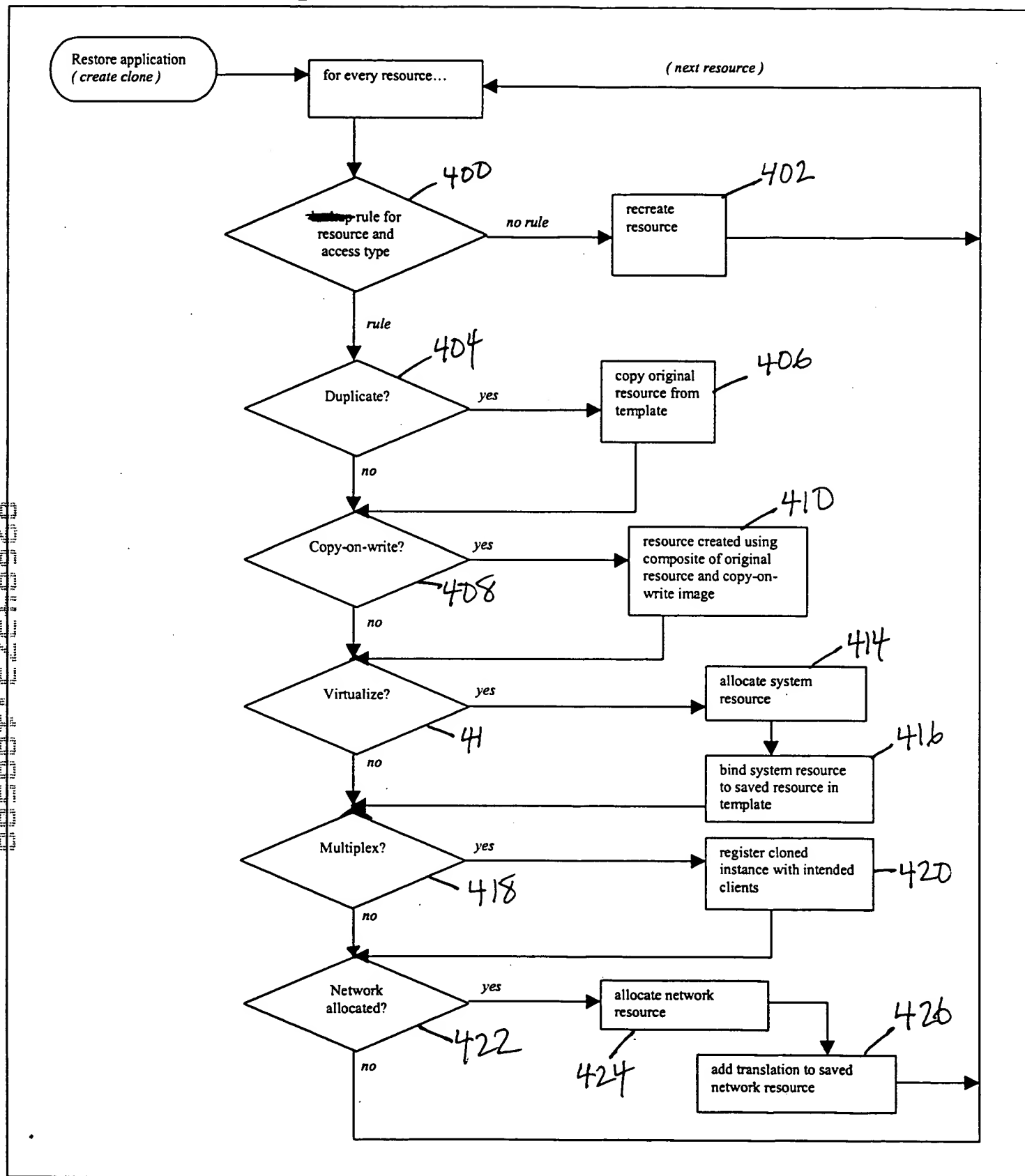


Figure 2. Cloning of a virtual template.

FIG. 9

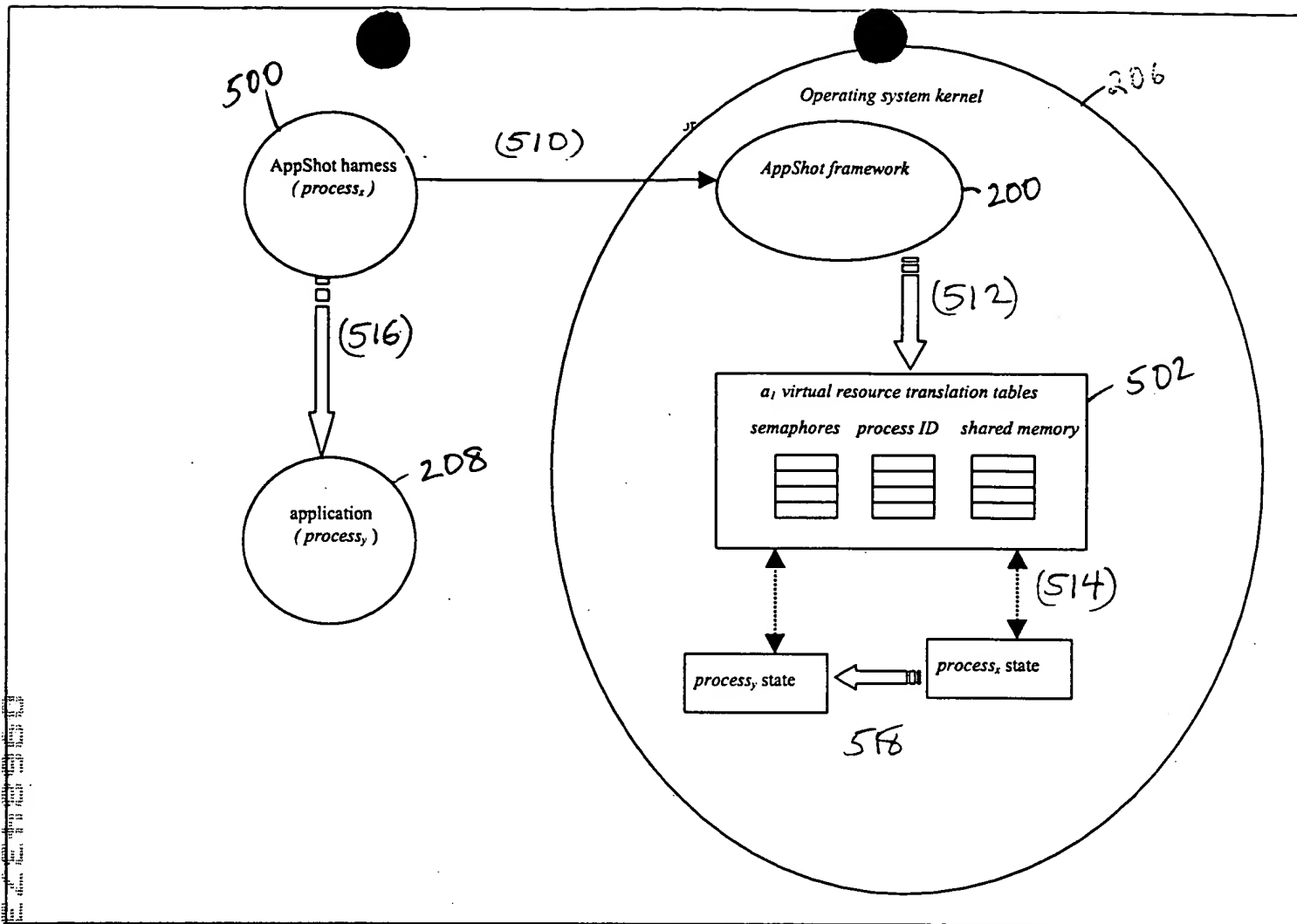


Figure 1. Registration of an application using virtual resource ID's.

FIG. 10

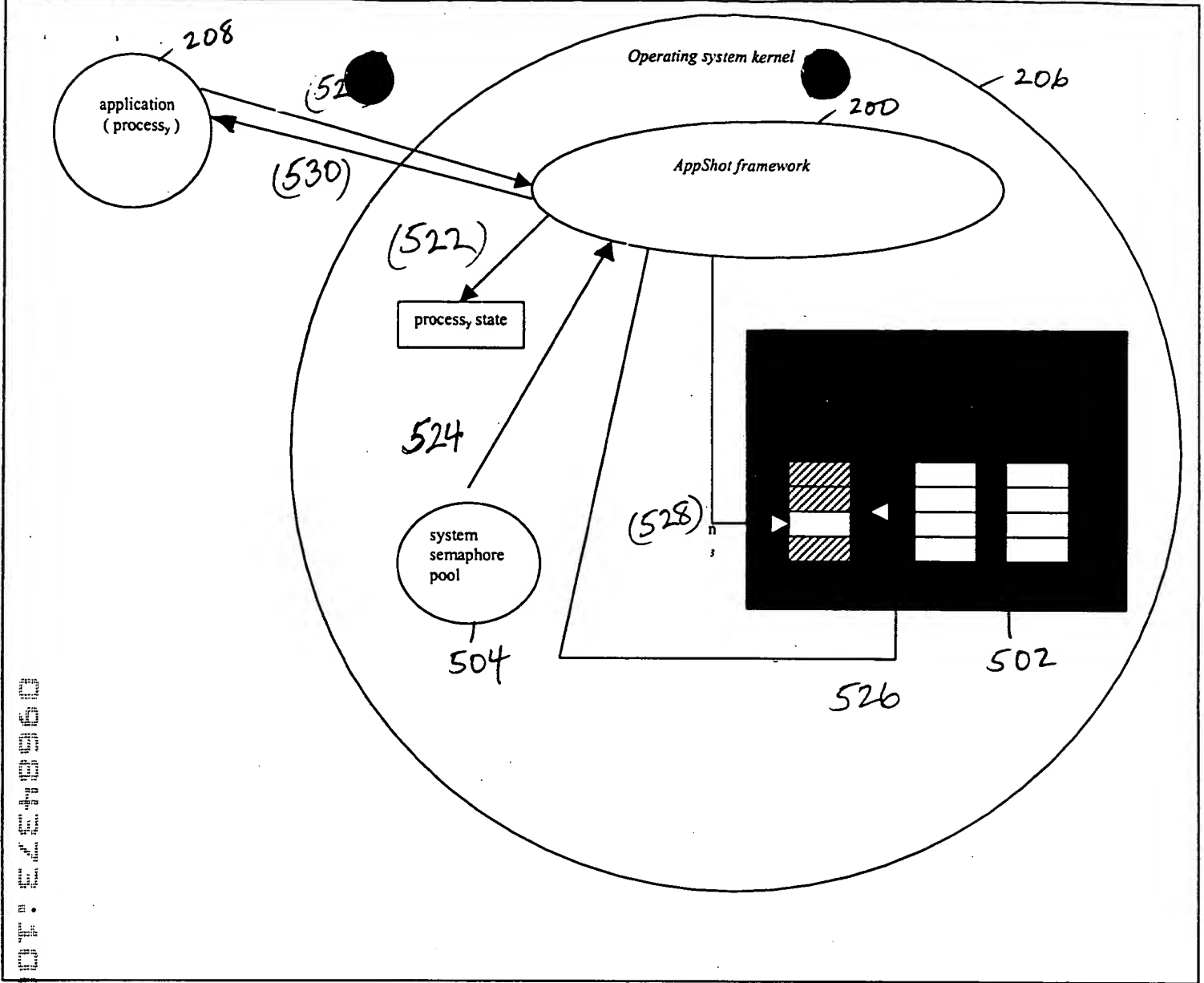


Figure 2. Allocation of a virtual resource (i.e. semaphore)

Fig. 11

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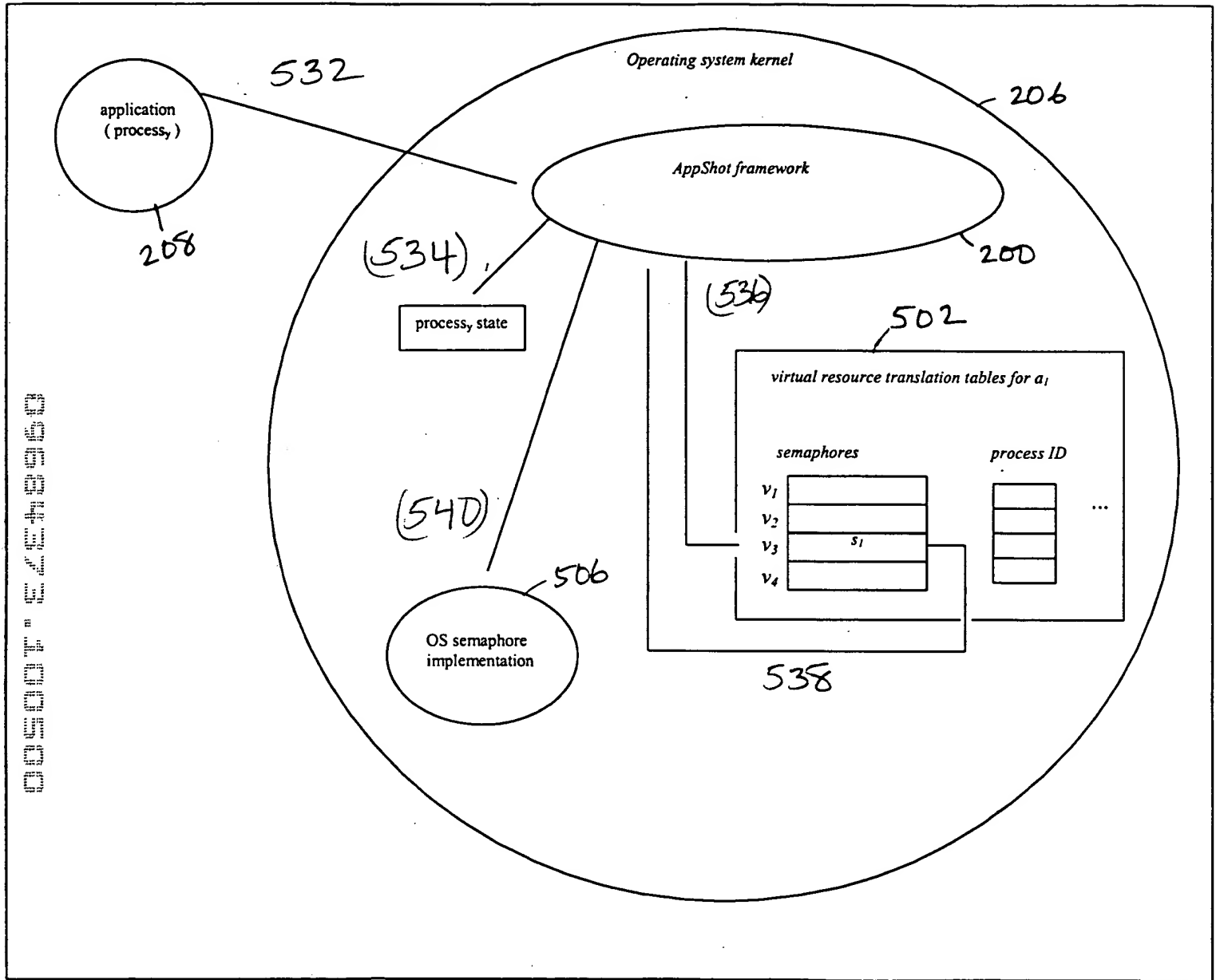


Figure 3. Translation of a virtual resource (i.e. semaphore), virtual to system

FIG. 12

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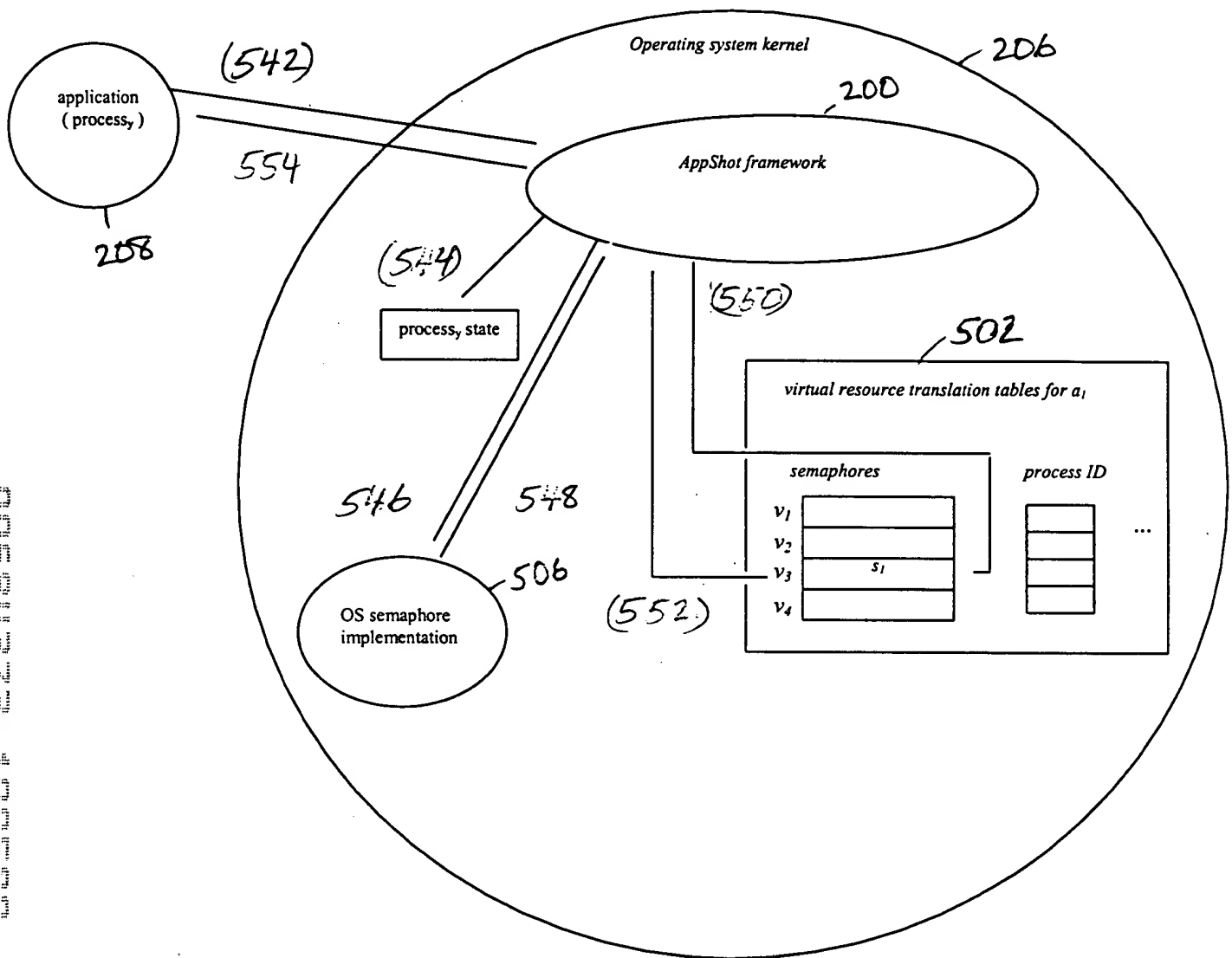


Figure 4. Reverse translation of a virtual resource (i.e. semaphore), system to virtual

FIG. 13

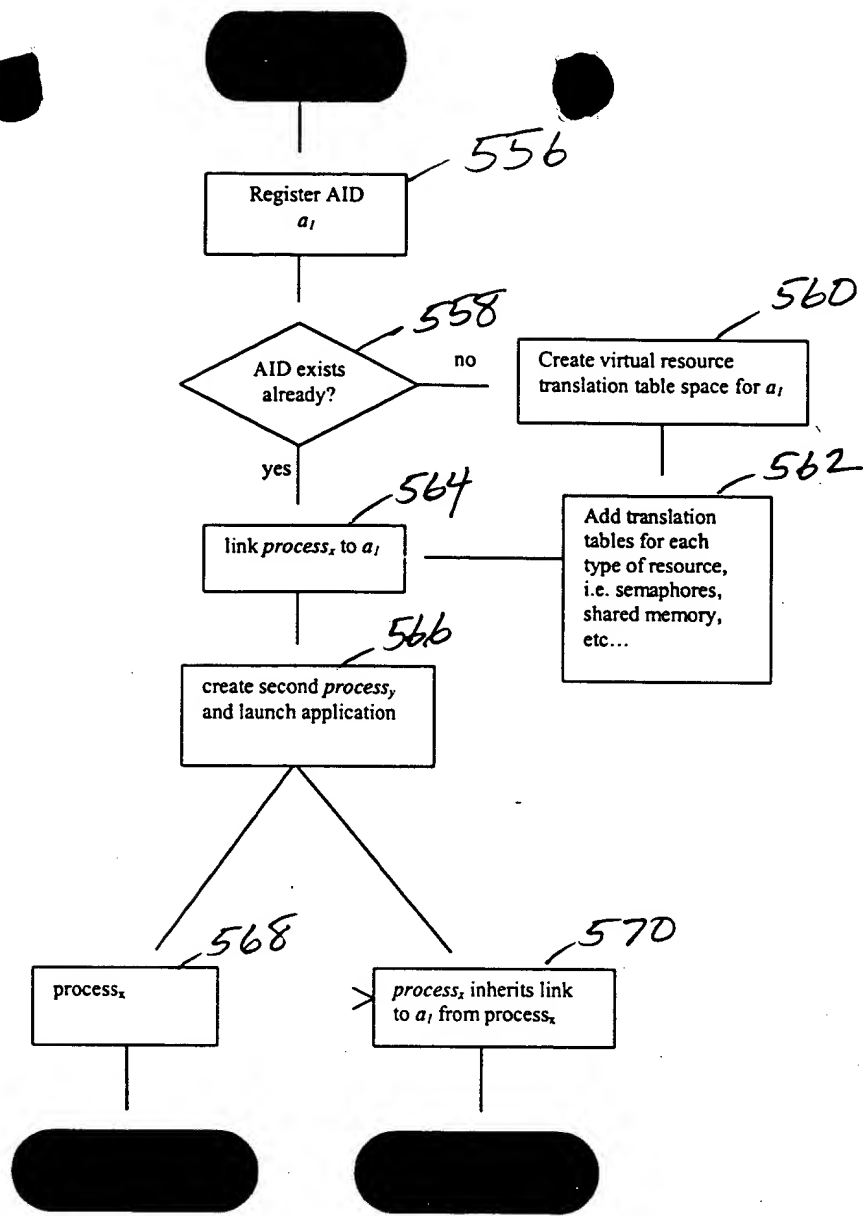


Figure 5. Flowchart describing creation of virtual translation tables.

FIG. 14

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Figure 6. Flowchart depicting translation of a virtual resource (i.e. semaphore)